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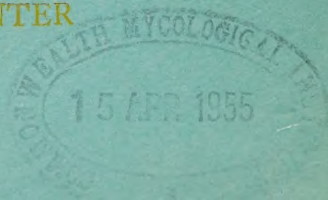


FEDERATION OF NIGERIA

ANNUAL REPORT
ON THE
DEPARTMENT OF AGRICULTURE
(Central)
FOR THE YEAR 1952-53
PART I

NINEPENCE NETT

LAGOS: FEDERAL GOVERNMENT PRINTER



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CONTENTS

PART I

	<i>Pages</i>
Foreword by Honourable Minister of Land and Natural Resources	3
Report by Inspector-General	5
Report by Research Adviser	9
Staff List	13
Financial Account	15
Departmental Organisation	16

FOREWORD

By The Honourable K. O. MBADIWE

Central Minister of Land and Natural Resources

The activities of the Central Department of Agriculture for the year 1952-53 are summarized in the following pages. Unlike previous years, however, the technical reports on which this summary is based are being printed separately to enable early printing of the most interesting facts which have arisen during the period under review.

The importance of research in agriculture cannot be stressed too strongly. The work is unspectacular, and much of the information which is accumulated by the scientists does not reach the public for several years, when experiments have proved a fact which can be directly applied by the local farmer. There is no doubt, however, that the whole future of agriculture in Nigeria, whether for cash crops or food crops, is dependent upon this little-known study of problems which arise in the normal course of agricultural development.

The following pages contain a number of results, however, which are of immediate importance to the farmer. Firstly, must be noted the results of the Soil Scientists' Survey in the Western Region, where the Survey has shown that an area exists which is suitable for the growing of cocoa, and this area is large enough to replace all those areas which are at present affected by swollen shoot disease and where the cocoa trees are being cut out to avoid a spread of that disease. Secondly, recent experiments in cotton breeding have produced a type which is replacing the old Allen type of seed, and it is estimated that the increase in value of this improvement to the cotton industry will amount to some £ $\frac{1}{2}$ million in any one year. Thirdly, the work of inter-cropping of food crops has shown that cowpeas grown as an inter-crop will give as good or even higher yields than cowpeas grown alone. There is also evidence that maize yields when inter-cropped are nearly as great as those given by sole-cropped maize. A new variety of cowpea has also been bred which is eminently suited for mechanized farming. These three results alone are full justification for the agricultural research organizations of the country, but in the meantime a vast amount of new knowledge is constantly being acquired.

The Report is a story of hard if unspectacular work carried out by the Officers employed, and I am glad to be able, in this Foreword, to express my appreciation of the devotion to duty of all these Officers.

Annual Report on the Agricultural Department (*Central*) for the year 1952-53

Part I

REPORT OF THE INSPECTOR-GENERAL

This report takes the same form as that of 1951-52. A general section, which makes reference to policy, administration and matters of major interest, is followed by a brief review by the Research Adviser on the research work being undertaken. More detailed reports of the work of the specialist officers of the Department are being published separately.

PART I.—GENERAL

Headquarters Administration

Mr A. G. Beattie, C.B.E., who was appointed first Inspector-General of Agriculture, following the revision of the Constitution in 1951, proceeded on retirement in January 1953, after nearly thirty years service in Nigeria. Mr R. Johns, O.B.E., Director of Agriculture, Western Region, was appointed as his successor.

Mr F. J. Harper, Senior Agricultural Officer, appointed to Headquarters as Assistant to the Inspector-General of Agriculture, left Nigeria in March 1953, on transfer to Sarawak as Deputy Director of Agriculture. He was succeeded by Mr R. B. Warner, Senior Agricultural Officer.

Mr M. I. Ntephe, Administrative Assistant, was transferred to Headquarters Office in October 1952.

The office of the Inspector-General of Agriculture was created under the existing constitution to advise, through the Central Minister of Natural Resources, the Government of Nigeria and the Regions on all agricultural matters which were of concern to Nigeria. The office also carries the responsibility for the direction of certain research activities in Nigeria; and to recruit and allocate senior service staff to the Regions. In addition the office provides membership in the person of the Inspector-General of Agriculture for the four Nigerian Produce Marketing Boards and two of the Inter-Territorial Research Institutes—West African Institute for Oil Palm Research and the West African Cacao Research Institute.

Inter-Territorial Research Institutes

Meetings were regularly convened and attended throughout the year. The Institutes for Cocoa and Oil Palm Research continue to make good progress which is recorded and published in their respective annual and quarterly reports.

The West African Institute for Oil Palm Research was formerly a Research Station of the Nigerian Department of Agriculture, but by arrangement with the Gold Coast and Sierra Leone Governments it was established by Ordinance on the 1st April, 1952, as an autonomous Inter-Territorial Research Institute. The work of the new Institute is now designed to serve the needs of the three contributing territories. During the year the Nigerian Oil Palm Produce Marketing Board made a further capital grant to complete the development programme. This grant, together with previous grants from all sources, secured the capital financial requirements and the recurrent costs of the Institute for some considerable time.

During the period proposals were submitted to secure the financial future of the West African Cacao Research Institute. These are now under active consideration. The proposal to establish a West African Cacao Research Institute Sub-Station at Ibadan was approved by the Board of Management for the purpose of studying specific Nigerian problems under local conditions. The Nigerian problems relate primarily to the study of local swollen shoot virus strains and mealy bug vectors.

Produce Marketing Boards

The four Produce Marketing Boards dealing with Oil Palm Produce, Cocoa, Groundnuts and Cotton continue to function satisfactorily and are rendering a most valuable service to local agriculture. The Boards' activities and trading accounts are published in their respective annual reports.

Nigerian Board of Agriculture

The Inspector-General of Agriculture continued as chairman of the Nigerian Board of Agriculture which was established under the Agricultural Ordinance No. 37 of 1950, but owing to the difficulties which arose with the introduction of the new constitution the Board did not meet during the year. The future of the Board as a representative organisation is now under consideration.

The 1951 constitution provided for the maintenance of a Central Research Organisation under the direction of the Inspector-General of Agriculture. In addition provision was made in the Regions for the employment of Specialist Officers, and for the establishment of Regional Research Organisations. These separate organisations have worked in close collaboration but the trend of events indicate that the Central Research Organisation will, in the future, tend to concern itself with fundamental and long-term research and that the Regions will undertake primarily short-term applied research and some long-term applied research.

The main body of this report contains a record of the activities of the Central Research Organisation and of the Specialists on the Regional establishment. The record contains the review of the Research Adviser summarising the main activities concerning agricultural research and is followed by more detailed reports of the separate sections with which he is concerned.

Central Research Schemes

The Central Department of Agriculture is responsible for the administration of two research schemes financed in part by funds from the Colonial Development and Welfare Act.

The revised rice research scheme became effective from the 1st October, 1952 and provided for the establishment of a Central Research Section at Badeggi in the Northern Region, and was designed so as to work in close association with the Rokupr Rice Research Station in Sierra Leone. During the year land was acquired at Badeggi and plans prepared for the buildings and the layout of the Station. Arrangements were also made for a specialist probationer to receive special training at the Imperial College of Tropical Agriculture, Trinidad, before taking up duties at Badeggi.

The Maize Rust Scheme provides facilities for the study of *Puccinia polysora* and high yielding maize. The scheme is financed by the British West African Territories, and in part from the Colonial Development and Welfare Act. A Plant Geneticist and a Mycologist were appointed and assumed duties in November 1952.

The general research work is discussed in detail by the Research Adviser and Specialist Officers. With the gradual arrival of new officers on first appointment it becomes possible to initiate new lines of work and expand the research working programme. Greater progress with research work should be made in the near future. The first Pasture Research Officer was appointed during the period.

Visiting Missions

As part of their survey of British Colonial Territories Mr J. D. Brown and Mr D. E. Faulkner visited Nigeria to study livestock problems. Their report entitled "Improvement of Cattle in British Colonial Territories in Africa" has since been published, and in a very large measure it endorses the livestock policy of Nigeria which was previously prepared by a representative committee under the chairmanship of the Honourable Minister of Natural Resources and approved by the Council of Ministers.

A mission sponsored by the Overseas Committee of O. E. E. C. visited Nigeria in August 1952, to study groundnut cultivation in the Northern Region. A report of the Missions' findings has not yet been received.

Agriculture in the Regions

The 1952 season was particularly favourable for the production of local food crops in all areas. In the Northern Region the rains were late but were evenly distributed and farmers enjoyed one of the best seasons on record. In the Western Region the rain-fall was average and although there were seasonal fluctuations in supplies and prices, supplies generally were plentiful. In the Eastern Region a good food crop season was recorded and foodstuffs were in good supply.

Rice as a local food crop continues to expand in all regions : this is particularly evident in the Eastern Region which has in part been stimulated by the introduction of rice mills. In the East attention is also being attracted to the utilisation of the tidal mangrove swamps around Calabar and Rivers Province, where the potentialities of growing rice are vast.

Export Crops

The purchasing and marketing of the principal export crops was undertaken by the Cocoa, Oil Palm Products, Groundnuts and Cotton Marketing Boards. The Groundnut Marketing Board also handled benniseed, soya beans and sunflower seed. Rubber, which is an important export crop, is not handled by a Marketing Board.

Cocoa

The 1952-53 Cocoa crop was exceptionally early and purchases were well above average in the early part of the season and had it not been for heavy rains continuing well into November the crop might have been a record one. The total tonnage graded by the Produce Inspection Section of the Department of Marketing and Export in Nigeria and the Cameroons during the period 1st April, 1952 to March, 1953 was :—

1952-53	1951-52	Increase tons
107,124	104,679	2,445

Of this tonnage 87 per cent was graded in the Western Region.

Palm Kernels

Some 292,699 tons of palm kernels were graded in Nigeria and the Cameroons during the period April 1952 to March 1953, which shows an increase of 57,715 tons over the previous year. Of this tonnage 51 per cent was graded in the Eastern Region and the Cameroons. The quality was satisfactory.

Palm Oil

Palm Oil production showed an increase of 45,132 tons over the previous year. 205,344 tons were graded and exported. Quality continues to improve and 39 per cent of the total tonnage graded in the Eastern Region was special grade (less than 4½ per cent F.F.A.). Price incentive, wider use of oil processing and the increasing popularity of the Pioneer Oil Mill contributed to this improvement.

Groundnuts

Conditions were again favourable for the production of groundnuts in all producing areas and production showed an increase of 12,440 tons over the previous year. Production was as follows :—

	1952-53	1951-52
Kano Area	401,161	393,261
Rivers Area	29,535	24,995
	430,696	418,256

Cotton

The 1952-53 cotton crop although above average was well below the record crop of the previous year. This short fall is attributed to the poor rains at planting time particularly in Sokoto Province. The total quantity of cotton seed inspected in the Northern Region was as follows :—

<i>November 1952 to</i>	<i>November 1951 to</i>
<i>April 1953</i>	<i>April 1952</i>
47,082 tons	60,749 tons

Rubber

Despite a short fall in price during 1952 the decrease in rubber graded was only nine per cent. The following grading figures are recorded but do not include the production of Cameroons Plantations, Messrs Palmol and J. A. Thomas Estates.

<i>1952-53</i>	<i>1951-52</i>
14,200	15,634

Regional Agricultural Services

The Annual Reports of the Regional Departments of Agriculture are compiled and published separately by the Regional Directors of Agriculture. They review policy and major developments, crop and livestock industries as well as the activities of the Regional Departments of Agriculture.

December 1953.

R. JOHNS,
Inspector-General of Agriculture

REPORT OF THE RESEARCH ADVISER, 1952-53

INTRODUCTION

It is encouraging to be able to report the expansion of research activities during the period under review as a result of an increase in the number of specialists by five. There were no changes in research policy and the organisation remained on the lines described in my Annual Report for 1951-52.*

2. The senior service staff position at March 1953 was as follows :—

<i>Central Research Organisation</i>	<i>Present Staff</i>	<i>Approved Establishment 1952-53</i>
Research Adviser	1	1
Principal Research Officer	—	1
Senior Specialists	3	3
Specialists	5	9
Rice Research Scheme R.514 Specialists	—	2
Administrative Assistant	1	1
<i>Northern Region</i>		
Specialists	4	5
Empire Cotton Growing Corporation Specialists	3	3
<i>Western Region</i>		
Specialists	3	3
Cacao Soil Survey	4	4
<i>Eastern Region</i>		
Specialists	1	3
<i>C.D. & W. Maize Rust Research Scheme R.471 West Africa</i>		
Specialists	2	3
	27	38

It will be seen that the number of vacancies for the coming year amounts to 11. Most of these have been recruited and will be coming forward within the next two years as their post-graduate training is completed.

During the year, four specialists from the Central Research Organisation were posted to Regions to assist in local research problems, three to the Northern Region (two Botanists and one Chemist) and one to the Western Region (Chemist).

Some of the most promising junior Assistants have been selected for scholarships to University courses, leaving gaps in the staff which are difficult to fill.

It will be appreciated that even when all the specialist posts in the present establishment are filled, the number of scientists available can not provide an adequate research service to cope with the many problems presented by a country the size of Nigeria. Some of the Regional Governments are already aware of this situation and are taking steps to augment their research staff.

SOIL SURVEY AND INVESTIGATIONS ON SOIL FERTILITY

The arrival of two additional soil scientists permitted a further expansion of soil survey work in the Western Region. The Reconnaissance Survey remained the fundamental approach to the classification of soils, but more emphasis has recently been placed on the detailed survey of small areas for advisory purposes.

An area of over 2,500 square miles was surveyed in Ibadan and Oyo Provinces in the course of the year. As a result, a more thorough description of the soil series already recognised has been made possible and a soil association map (1/125,000) of the cocoa belt of Ibadan and Oyo Provinces is being prepared.

* At present in the Press.

One interesting outcome of this survey is the discovery in the Ilesha area of over 200 square miles of land suitable for cocoa cultivation, which is not at present under this crop. This region could offset the present area of mass infection of cacao swollen shoot virus in Ibadan Province which amounts approximately to 250 square miles.

Work in the Northern Region on the mineral deficiencies of crop plants continues to be fruitful, particularly in connexion with sulphur deficiency of groundnuts at Kontagora. It is planned to expand research greatly on the nutrition of crops as well as the problem of maintenance of soil fertility as soon as further increase in staff permits. In the south, research on nitrate and phosphate requirements is being continued, as well as the relation of fallows to the restoration of soil fertility.

IMPROVEMENT OF FOOD AND CASH CROPS

In the north, the cotton breeder's variety Samaru 26C has now replaced Allen as the commercial cotton. It is estimated that the increase in value of this improvement to the cotton industry is around £500,000 a year. Further selection work continues on cotton, groundnuts, guinea-corn, rice, benniseed, tobacco, and cassava. A start was also made with pasture research with the arrival of a Pasture Research Officer.

In the south, the selection and breeding of maize with special reference to resistance to rust, *Puccinia polysora*, was handed over in November 1952, to the recently formed Maize Rust Research Unit.

Work with food crops has mainly been concerned with maize and cowpeas, especially in connexion with their inter-cropping. It has been found that cowpeas grown as an intercrop give as good or even higher yields in comparison with cowpeas grown alone. There is also evidence that maize yields when inter-cropped are nearly as great as those given by sole-cropped maize. These results should have great practical importance. It would not appear desirable to grow late maize or cowpeas as a sole crop unless mechanisation or resting of the land makes it necessary. There are now available certain cowpea varieties which are eminently suited for mechanised farming, for example "New Era" which can give relatively high yields in a short cropping period. On the other hand, certain slow maturing varieties, such as "Machakos", may meet the needs of a subsistence farmer requiring fresh food over a relatively long period.

Further work on yams and cassava is planned as soon as additional staff is available.

Valuable information has been obtained from the cacao spacing trial at Odo Ona Nla. The results obtained during the first nine years from planting have been prepared for publication. Little difference in yield per acre was found between the four chosen spacings which ranged from 5' by 5' to 7½' by 7½'. Cocoa breeding and selection work continued. The hybrid seedlings, which are the progeny of the Nigerian selection T38 crossed with high-yielding "Trinitario" selections, have maintained their superior yields as compared with T38.

Observations were maintained on individual Kola trees at Ibadan and Agege with a view to selecting high-yielding trees of good quality. A collection of outstanding clones of Hevea rubber was also started during the year with the object of having a Departmental nursery from which good planting material can be distributed.

Research work on fruit was expanded to include pineapples.

CONTROL OF PLANT DISEASES AND PESTS

Considerable progress was made by the Plant Pathologist in devising control measures against black-pod disease of cacao (*Phytophthora palmivora*). The results obtained from small scale spraying experiments were sufficiently encouraging to warrant their being tried on a larger scale. A number of cacao farmers in Ondo Province have shown great interest in the control of the disease at Aponmu. This experimental area will be used as a training ground for Departmental staff and as centre for extension work. Further information will be sought on spraying techniques with the objective of obtaining maximum yields at lowest spraying costs.

A blight of the Irish Potato (*Phytophthora infestans*) appeared for the first time at Santa, Bamenda Province in the Cameroons in May 1952. Prompt action was taken by the Senior

Botanist with the introduction of blight resistant potato varieties from the United Kingdom, the Dominion of Canada and the United States of America, for trial in the rainy season of 1953. The results obtained to date are most encouraging.

Additional varieties of sugar cane were introduced for testing in the Northern Region for resistance to Red Rot (*Colletotrichum falcatum*). Other important diseases which require attention when further specialists are available are the virus diseases, "rosette" of groundnuts, and "mosaic" of cassava.

Continued attention was given by the Entomology Section of the Central Research Organisation to two major insect pests of cocoa trees, also to the control of stem-borers in maize and to miscellaneous pests of citrus trees in rehabilitation plantings.

Dusting with 5 per cent D.D.T. against the bugs (*Sahlbergella*, *Distantiella* and *Helopeltis*) responsible for "Capsid blast" continued throughout the dry season of 1952-53. Treatments were carried out over an eighteen month period on several plots of from one to ten acres, in the areas representative of the cocoa belt of the Western Region. The effectiveness of these control measures was shown not only by the greatly improved vegetative condition of the treated plots as compared with the untreated controls, but also by increased pod production.

After a period of treatments which included two dry seasons, it was evident that all the treated plots had improved in general condition and in potential yields, while some of the untreated ones had deteriorated. The plots which were treated for only one season, showed improvement in general appearance, but no significant increase in pod production.

However, the present cost of experimental operation may be too high to give an adequate return to the farmer. Further work on dusting techniques is being undertaken, to develop more efficient equipment and to devise reduced rates and frequencies of treatment, with the object of making protection against "Capsid blast" generally available, in a simple and economic form.

Trials of chemical control measures against stem-borers in early and late maize were continued. There are indications that planting date in relation to both weather conditions and egg-laying cycles, may be a more important factor in attaining high yields than any insecticide tested so far. Recommendations for control measures other than removal of crop debris would be premature, until at least another year's study of the problem has been completed.

The Sorghum Midge (*Contarinia sorghicola*), an important pest of guinea-corn in East Africa, and of other crops in the Americas, was first recorded in Nigeria in February 1953, from volunteer guinea-corn on a farm near Ibadan. A Nigeria-wide survey of its distribution was begun at once, and a preliminary report should be available shortly.

Some difficulty has been experienced in establishing citrus trees in rehabilitation and development areas during the past year. To some extent this has been attributable to aphids, which suck the juices of the succulent new shoots and leaves, causing distortion and sometimes killing the parts attacked. In addition, several species of grasshopper have been seen girdling the green bark of new shoots and so bringing about their death. Empirical treatments with sprays and dusts respectively, against these two types of pest have proved promising. Further investigations are planned for the year 1953-54, with the object of being able to recommend combined spraying and dusting schedules as soon as possible.

COLONIAL DEVELOPMENT AND WELFARE RESEARCH SCHEMES

Rice Research

The site plans for the Central Rice Research Station at Badeggi have been completed and Departmental arrangements have been made for an Engineer and a Plant Breeder to be posted to the region to supervise construction in the Autumn of 1953.

Maize Rust Research, West Africa

The West African Maize Rust Research Unit is centred at Moor Plantation. The work of the Unit started with the arrival of Dr W. R. Stanton, Senior Scientific Officer in November 1952 and Mr R. H. Cammack, Mycologist, in December 1952.

An essential preliminary to the work of the Maize Rust Research Unit was the training of a team of assistants in the special technical duties they were to undertake.

The maize selection and breeding work in Nigeria is co-ordinated with experiments and observations in other territories in both East and West Africa. The programme of investigations is planned so that results obtained can be applied throughout Nigeria as well as in other countries.

A good start has been made by the Unit in assembling and testing a large collection of maize varieties for rust resistance.

INTERCHANGE OF VISITS BY SPECIALISTS TO NEIGHBOURING TERRITORIES

Mr J. T. Davey, Entomologist, remained seconded to C.I.P.P.A.S., as leader of a mission studying the ecology of the African Migratory Locust in the French Sudan.

Mr T. A. Russell, Senior Botanist represented Nigeria at the Thirteenth International Horticultural Congress held in London in September 1952.

Dr H. Vine represented Nigeria at the first meeting of the West African Regional Committee for soil conservation and land utilisation in Dakar from December 8th to 13th, 1952.

Dr W. R. Stanton, Senior Scientific Officer, visited Sierra Leone and the Gold Coast in December 1952, and Mr R. H. Cammack visited Dahomey and the Gold Coast in March 1953. Both these visits were made to co-ordinate maize rust research work in the three territories.

A mission sponsored by the Overseas Territories Committee of the O.E.E.C. visited Nigeria in August to September 1952, with the object of studying the cultivation of groundnuts in West Africa, and the methods used for plant breeding and improvement. The visitors consisted of Dr B. B. Higgins (U.S.A.) leader of the Mission, Messrs G. G. Bolhuis (Holland), L. M. Bologna (Italy), E. E. de Preter (Belgium), I. Bouffil (French Senegal) and R. A. Neve (Gold Coast).

M. J. L. Renouveau, Agronomist of the I.R.H.O. Paris, spent the period May 1952 to March 1953 at the Northern Regional Research Station at Samaru studying groundnut research, prior to taking up his duties at Niamgoloko, Haute Volta.

Other visiting Scientists from outside territories, included, Messrs M. Barron, Dahomey, M. A. Blane, Agronomist, Gold Coast, T.S. Bughanan, Technical Co-operation Administration, U.S.A., R. Coste, Director of Agriculture, Reunion, M. Galichet and M. Gutnecht, Cotton Research Station, Bebedjia, Lake Chad, D. W. Hall, Pest Infestation Laboratory, Department of Scientific and Industrial Research, Dr L. F. Hough, Technical Co-operation Administration, Liberia, J. C. May, Director, Empire Cotton Growing Corporation, J. Nicol, Senior Entomologist and A. Pickles, Deputy Director, West African Cacao Research Institute, Gold Coast, G. W. Nye, O.B.E., Deputy Agricultural Adviser, Colonial Office, R. W. Piper, Principal, Research Department, Colonial Office, J. W. Purseglove, Department of Agriculture, Uganda, M. Ribiero, Agricultural Chemist, Portuguese Guinea, E. Q. Rosenquist, Botanist, Department of Agriculture, Malaya, J. B. Roux, Cotton Research Station, Bebedjia, Lake Chad, D. Stephens, Chemist, Department of Agriculture, Gold Coast, and J. West, Director, West African Cacao Research Institute, Gold Coast.

ACKNOWLEDGEMENT

Grateful acknowledgement is made for assistance rendered by the various Commonwealth Agricultural Bureaux, particularly the Mycological Institute and the Institute of Entomology for aid in identification of fungi and insects, as well as to the Bureau of Horticulture and Plantation Crops and the Bureau of Soils and Fertilizers for information on crops and plant nutrition problems of importance to agriculture in Nigeria.

J. M. WATERSTON,
Research Adviser

22nd December, 1953.

STAFF LIST OF RESEARCH WORKERS AS AT 31ST MARCH, 1953 (INCLUDING OFFICERS OF THE REGIONAL RESEARCH STATIONS, THE MAIZE RUST RESEARCH SCHEME, THE RICE RESEARCH SCHEME AND THE EMPIRE COTTON GROWING CORPORATION BUT NOT W.A.I.F.O.R.)

Research Adviser :

Dr J. M. Waterston, B.Sc., Ph.D. (Edin.) A.I.C.T.A. (On leave from 20-8-52 to 14-1-53) Administration (2)

Principal Research Officer :

Vacant

Senior Specialist Officers :

W. E. Freeman, B.Sc. (Lond.), A.R.C.S., A.I.C.T.A. .. Senior Botanist (2)
 T. A. Russell, B.Sc. (Lond.), A.R.C.S., A.I.C.T.A., Dip. Agric. (Cantab.) (Resumed duty 12-10-52) Senior Botanist (2)
 Dr H. Vine, B.Sc., Ph.D. (Lond.) A.R.I.C. Senior Chemist (2 and 3)

Specialist Officers :

C. A. Thorold, M.A. (Oxon) A.I.C.T.A. (Resumed duty 3-12-52) Plant Pathologist (3)
 J. H. Gisborne, B.A. (Oxon), A.I.C.T.A. (On leave from 5-4-52 to 14-10-52) Botanist (2)
 H. Irving, B.S.A., B.Sc., Agric. (Toronto) (On leave from 25-6-52 to 20-11-52) Chemist (2)
 J. T. Davey, B.Sc. (Bristol), A.I.C.T.A. (On secondment to French Sudan) Entomologist (2)
 A. R. Maurer, B.S.A. (U.B.C.) M.Sc. (McGill) (On leave from 14-1-53 to 31-3-53) Botanist (4)
 J. L. Gregory, B.Sc. (Bristol), Dip. Agric. (Cantab.), Dip. Trop. Agric. (Trinidad) Entomologist (2)
 A. J. Vernon, B.Sc., Agric. (Reading) (On leave from 2-5-52 to 11-9-52) Botanist (3)
 E. J. Butler, B.A. (T.C.D.) Agronomist (4)
 J. R. G. Sutherland, B.Sc., Agric. (McGill) (On leave from 17-9-52 to 28-12-52) Senior Entomologist (1) and (2)
 G. M. Higgins, B.Sc., Agric. (Wales) Dip. Agric. (Cantab.) (Proceeded on leave 17-3-53) Chemist (4)
 L. A. Heapy, B.Sc. (Saskatchewan) Chemist (5)
 A. B. Rains, B.Sc. (Wales), Dip. Agric. (Cantab.) (Assumed duty 11-9-52) Pasture Research Officer (4)
 J. M. L. Kowal, B.Sc. (Wales) (On leave from 5-4-52 to 2-8-52) Agricultural Development Officer (3)
 4 Vacancies Specialists (2)
 1 Vacancy Specialist (4)
 2 Vacancies Specialists (5)

COCOA SOIL SURVEY

Vacant	Senior Soil Scientist
DR H. Vine, B.Sc., Ph.D. (Lond.) A.R.I.C., A.I.C.T.A. (Proceeded on leave 17-3-53. Seconded from Central Research Organisation)	Senior Chemist and Officer-in-Charge (1) and (3)
V. J. Weston, B.Sc. (Wales), A.R.I.C. (On leave from 20-12-52 to 2-3-53)	Soil Scientist (3)
R. F. Montgomery, B.Sc. (St. Andrews)	Soil Scientist (3)
A. J. Smyth, B.A. (Cantab.) (Assumed duty 20-11-52)	Soil Scientist (3)
R. P. Moss, B.Sc. (Lond.) (Assumed duty 28-1-53)	Soil Scientist (3)
W. G. D. Walters, M.Sc., A.R.I.C. (Appointment terminated 8-9-52)	Soil Scientist (3)

EMPIRE COTTON GROWING CORPORATION

H. E. King, B.Sc. Agric., Dip. Agric. (Wye) (Resumed duty 2-10-52)	Cotton Breeder
J. H. Saunders, B.Sc. (Aberdeen) (Proceeded on leave and transfer 17-3-53)	Assistant Cotton Breeder
M. A. Choyce, B.Sc. (Nottingham) D.I.C. (Lond.) (Assumed duty 13-8-52)	Entomologist
A. F. H. Baillie, B.Sc.	Entomologist

MAIZE RUST RESEARCH SCHEME R.471

Vacant	Senior Principal Scientific Officer
Dr W. R. Stanton, B.Sc. (Reading) Ph.D. (Assumed duty 5-11-52)	Senior Scientific Officer
R. H. Cammack, B.Sc. (St. Andrews) (Assumed duty 17-12-52)	Scientific Officer

RICE RESEARCH SCHEME R.224

Vacant	Senior Agricultural Officer
Vacant	Senior Botanist

SUPERINTENDENTS, ETC.

D. J. Iddon	Station Manager (4)
H. N. Booy	Agricultural Development Officer (4)
A. O. Bamtefa (Assumed duty 28-9-52)	Agricultural Superintendent (3)
C. O. Phillips (Assumed duty 29-11-52)	Agricultural Superintendent (3)

VISITING SCIENTIST

J. L. Renouveau, Lic. ès sc. (Paris)	Agronomist
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Notes :—

- (1) Retains title of Senior Specialist.
- (2) Paid from Nigerian Funds.
- (3) Paid from Western Region Development Funds.
- (4) Paid from Northern Region Development Funds.
- (5) Paid from Eastern Region Development Funds.

DEPARTMENT OF AGRICULTURE

SUMMARY OF CENTRAL EXPENDITURE AND REVENUE FOR THE PERIOD
1ST APRIL, 1952 TO 31ST MARCH, 1953

ESTIMATED EXPENDITURE

	<i>Personal Emolument</i>	<i>Other Charges</i>	<i>Special Expendi- ture</i>	<i>Total</i>
	£	£	£	£
Main Agriculture (Nigeria)	35,949	19,400	10,940	66,289
Agricultural Development (Nigeria) ..	4,985	1,450	5,587	12,022
Agricultural Development—Maize Rust Re- search Scheme (Nigeria)	6,358	5,100	11,540	22,998
Agricultural Development—Rice Research Scheme (Nigeria)	2,165	1,650	17,825	21,640
Total £	49,457	27,600	45,892	122,949

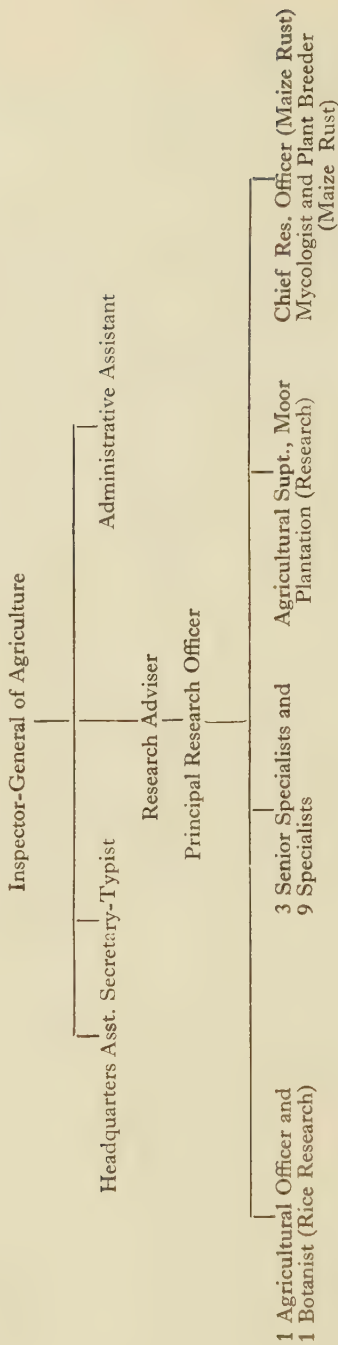
ACTUAL EXPENDITURE

	<i>Personal Emolument</i>	<i>Other Charges</i>	<i>Special Expendi- ture</i>	<i>Total</i>
	£	£	£	£
Main Agriculture (Nigeria)	29,516	16,464	5,399	51,379
Agricultural Development (Nigeria) ..	2,840	553	5,436	8,829
Agricultural Development—Maize Rust Re- search Scheme (Nigeria)	800	1,641	1,189	3,630
Agricultural Development—Rice Research Scheme (Nigeria)	236	366	1,092	1,694
Total £	33,392	19,024	13,116	65,532

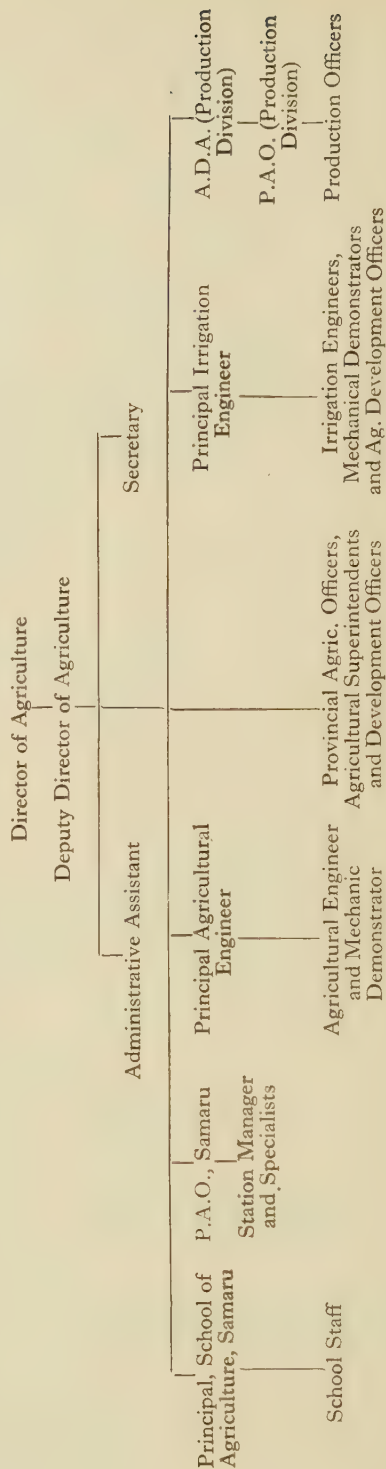
REVENUE

	<i>Estimated Revenue</i>	<i>Actual Revenue</i>
	£	£
<i>Main Agriculture</i> Sales of Agricultural Products	170	381
Total £	170	381

Central Organisation of the Department of Agriculture

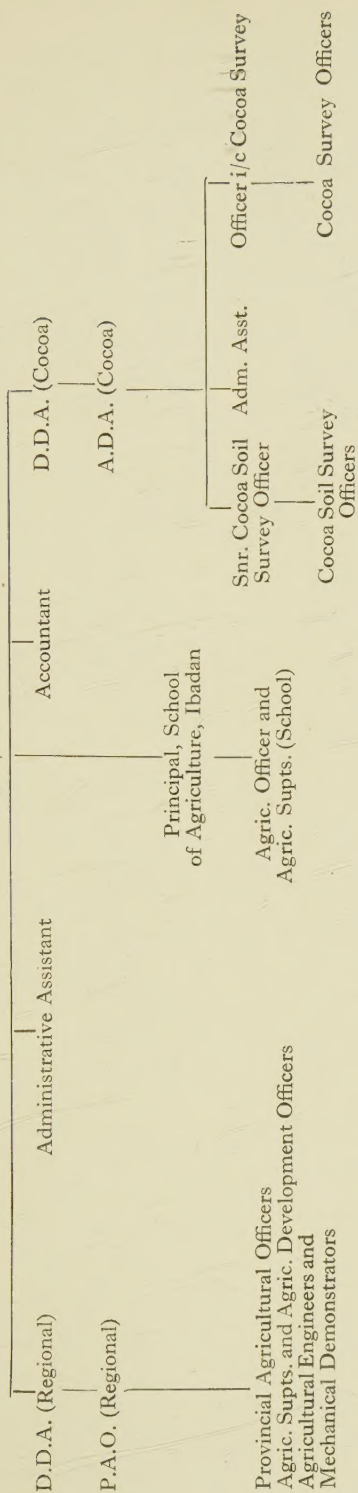


Organisation of Northern Regional Department of Agriculture



Western Region

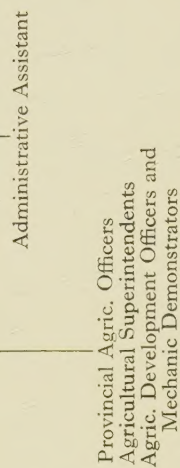
Director of Agriculture



Eastern Region

Director of Agriculture

Deputy Director of Agriculture



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British Empire Forestry Conference, 1947, 4s.

Geological Survey Bulletins

- No. 6—The Nigerian Coalfield (Section 1 Enugu Area), *Bain*, 5s.
- No. 9—The Southern Plateau Tinfields, *Falconer* ; The Geology of Mama, Nassarawa, *Raeburn* ; The Geology of Bauchi Town, *Bain* ; 5s.
- No. 10—Eocene Fishes from Nigeria, *White*, 6s-3d.
- No. 11—The Tinfields of Zaria and Kano Provinces, *Raeburn, Bain & Russ* ; Tinstone in Calabar District, *Raeburn* ; 10s.
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- No. 19—The Geology of the Plateau Tinfields—Resurvey 1945-8 (*Dr Dixey*), 12s-6d.
- No. 20—The Geology of the Osi Area, Ilorin Province (*B. C. King & A. M. J. de Swardt*) 10s-6d.

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- The Revised Laws of Nigeria, 1948, Limp Cloth Cover, £10-10s per set.
Separate volumes are not sold.
- Laws of Nigeria, 1948-49 Supplement, Stiff Bound, 35s.
- Laws of Nigeria, 1948-49 Supplement, Limp Bound, 30s.
- Laws of Nigeria, 1953, Stiff Bound, 21s.
- Laws of Nigeria, 1953, Limp Bound, 17s-6d.

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- Nigeria Law Reports, Vols. 2, 12 and 19, 10s-6d each.
- West African Court of Appeal, Selected Judgments, Vols. 2, 3, 4, 7, 8 and 11, 10s each.

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- Hand-book of Constitutional Instrument, 3s-4d.

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- Care and Treatment of Lunatics, 5s.
- Nutrition in the Colonial Empire—Part I, *McDonald*, 3s. Part II, *McDonald*, 2s-6d.

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N.S.S. 3. Medical and Health.
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- N.S.S. 9. Commerce and Industries, Co-operative and Statistics.
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- N.S.S. 12. Electricity, Posts and Telegraphs.
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African Education, 8s-6d.

Checklist and Atlas of Nigeria Mammals, 10s.

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Eastern Region Scholarship Scheme of 1952, 6d.

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Northern Region Provincial Annual Report, 1951, 9d.

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1955

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